

WHAT IS CLAIMED IS;

[1] An aqueous dispersion characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential of said polymer particles and the zeta potential of said inorganic particles are of opposite signs.

[2] An aqueous dispersion characterized by containing polymer particles, inorganic particles and water, wherein said polymer particles and said inorganic particles are electrostatically bonded to form composite particles.

[3] An aqueous dispersion characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential of said polymer particles and the zeta potential of said inorganic particles are of opposite signs, and said polymer particles and said inorganic particles are electrostatically bonded to form composite particles.

[4] An aqueous dispersion according to Claim 3, wherein said polymer particles have at least one from among carboxyl group and the anion and sulfonic acid group and the anion, and said inorganic particles are of either or both alumina and titania.

[5] An aqueous dispersion according to Claim 4, wherein said inorganic particles are of alumina, and the pH of said aqueous dispersion is 2-9.

[6] An aqueous dispersion according to Claim 4, wherein said inorganic particles are of titania, and the pH of said aqueous dispersion is 2-6.

[7] An aqueous dispersion according to Claim 3, wherein said polymer particles have at least one from among cation-formable nitrogen-containing group and their cation, and said inorganic particles are of at least one from among silica, zirconia and titania.

[8] An aqueous dispersion according to Claim 7, wherein said inorganic particles are of silica, and the pH of said aqueous dispersion is 2.5-8.5.

[9] An aqueous dispersion according to Claim 7, wherein said inorganic particles are of zirconia, and the pH of said aqueous dispersion is 4-8.5.

[10] An aqueous dispersion according to Claim 7, wherein said inorganic particles are of titania, and the pH of said aqueous dispersion is 6.5-8.5.

[11] An aqueous dispersion according to Claim 4, wherein said polymer particles have at least one from among ester group, amide group, hydroxyl group and ether group.

[12] An aqueous dispersion according to Claim 3, wherein a plurality of said inorganic particles are attached to a surface of said polymer particles.

[13] An aqueous dispersion according to Claim 12, wherein a ratio (Sp/Si) of a mean particle size of said polymer particles (Sp) and a mean particle size of said inorganic particles (Si) is 1 through 40.

[14] An aqueous dispersion according to Claim 13, wherein a ratio (Wp/Wi) of a content of said polymer particles (Wp) and a content of said inorganic particles (Wi) is 0.05 through 1.

[15] An aqueous dispersion according to Claim 3 which further contains a surfactant, wherein a content of said surfactant is not greater than 0.15 wt%.

[16] An aqueous dispersion according to Claims 3 or 15, which further contains an oxidizing agent and/or a polyvalent metal ion.

[17] An aqueous dispersion characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential

of said polymer particles and the zeta potential of said inorganic particles are of opposite signs, said polymer particles and said inorganic particles are electrostatically bonded to form composite particles, said composite particles are obtained after ultrasonic irradiation treatment or mechanical shear stress treatment with a homogenizer, and a mean particle size of said composite particles is not greater than 1 μm .

[18] An aqueous dispersion according to Claim 17, wherein said polymer particles have at least one from among carboxyl group and the anion and sulfonic acid group and the anion, and said inorganic particles are of either or both alumina and titania.

[19] An aqueous dispersion according to Claim 17, wherein said polymer particles have at least one from among cation-formable nitrogen-containing group and the cation, and said inorganic particles are of at least one from among silica, zirconia and titania.

[20] An aqueous dispersion for chemical mechanical polishing used in the manufacture of semiconductor devices, characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential of said polymer particles and the zeta potential of said inorganic particles are of opposite signs.

[21] An aqueous dispersion for chemical mechanical polishing used in the manufacture of semiconductor devices, characterized by containing polymer particles, inorganic particles and water, wherein said polymer particles and said inorganic particles are electrostatically bonded to form composite particles.

[22] An aqueous dispersion for chemical mechanical polishing used in the manufacture of semiconductor devices, characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential of said polymer particles and the zeta potential

of said inorganic particles are of opposite signs, and said polymer particles and said inorganic particles are electrostatically bonded to form composite particles.

[23] An aqueous dispersion for chemical mechanical polishing according to Claim 22, wherein said polymer particles have at least one from among carboxyl group and the anion and sulfonic acid group and the anion, and said inorganic particles are of either or both alumina and titania.

[24] An aqueous dispersion for chemical mechanical polishing according to Claim 23, wherein said inorganic particles are of alumina, and the pH of said aqueous dispersion is 2-9.

[25] An aqueous dispersion for chemical mechanical polishing according to Claim 23, wherein said inorganic particles are of titania, and the pH of said aqueous dispersion is 2-6.

[26] An aqueous dispersion for chemical mechanical polishing according to Claim 22, wherein said polymer particles have at least one from among cation-formable nitrogen-containing group and the cation, and said inorganic particles are of at least one from among silica, zirconia and titania.

[27] An aqueous dispersion for chemical mechanical polishing according to Claim 26, wherein said inorganic particles are of silica, and the pH of said aqueous dispersion is 2.5-8.5.

[28] An aqueous dispersion for chemical mechanical polishing according to Claim 26, wherein said inorganic particles are of zirconia, and the pH of said aqueous dispersion is 4-8.5.

[29] An aqueous dispersion for chemical mechanical polishing according to Claim 26, wherein said inorganic particles are of titania, and the pH of said aqueous dispersion is 6.5-8.5.

[30] An aqueous dispersion for chemical mechanical polishing

according to Claim 23, wherein said polymer particles have at least one from among ester group, amide group, hydroxyl group and ether group.

[31] An aqueous dispersion for chemical mechanical polishing according to Claim 22, wherein a plurality of said inorganic particles are attached to a surface of said polymer particles.

[32] An aqueous dispersion for chemical mechanical polishing according to Claim 31, wherein a ratio (Sp/Si) of a mean particle size of said polymer particles (Sp) and a mean particle size of said inorganic particles (Si) is 1 through 40.

[33] An aqueous dispersion for chemical mechanical polishing according to Claim 32, wherein a ratio (Wp/Wi) of a content of said polymer particles (Wp) and a content of said inorganic particles (Wi) is 0.05 through 1.

[34] An aqueous dispersion for chemical mechanical polishing according to Claim 22 which further contains a surfactant, wherein a content of said surfactant is not greater than 0.15 wt%.

[35] An aqueous dispersion for chemical mechanical polishing according to Claims 22 or 34, which further contains an oxidizing agent and/or a polyvalent metal ion.

[36] An aqueous dispersion for chemical mechanical polishing according to Claim 35, which further contains an organic acid.

[37] An aqueous dispersion for chemical mechanical polishing used in the manufacture of semiconductor devices, characterized by containing polymer particles, inorganic particles and water, wherein the zeta potential of said polymer particles and the zeta potential of said inorganic particles are of opposite signs, said polymer particles and said inorganic particles are electrostatically bonded to form composite particles, said composite particles are obtained

after ultrasonic irradiation treatment or mechanical shear stress treatment with a homogenizer, and the mean particle size of said composite particles is not greater than 1 μm .

[38] An aqueous dispersion for chemical mechanical polishing according to Claim 37, wherein said polymer particles have at least one from among carboxyl group and the anion and sulfonic acid group and the anion, and said inorganic particles are of either or both alumina and titania.

[39] An aqueous dispersion for chemical mechanical polishing according to Claim 37, wherein said polymer particles have at least one from among cation-formable nitrogen-containing group and the cation, and said inorganic particles are of at least one from among silica, zirconia and titania.

[40] A method for manufacture of a semiconductor device, characterized by using a chemical mechanical polishing slurry containing aggregates comprising polymer particles and inorganic particles adsorbed onto said polymer particles.

[41] A method for manufacture of a semiconductor device using a chemical mechanical polishing slurry containing aggregates comprising polymer particles, a surfactant adsorbed onto said polymer particles, and inorganic particles adsorbed onto said surfactant.

[42] A method for formation of embedded wiring, characterized by using a chemical mechanical polishing slurry containing aggregates comprising polymer particles and inorganic particles adsorbed onto said polymer particles.

[43] A method for formation of embedded wiring using a chemical mechanical polishing slurry containing aggregates comprising polymer particles, a surfactant adsorbed onto said polymer particles, and inorganic particles adsorbed onto said surfactant.